



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/908,778 08/07/97 SCHEPS

R 77222

EXAMINER

TM02/0810

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ART UNIT

PAPER NUMBER

2613

DATE MAILED:

08/10/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/908,778

Applicant(s)

Scheps

Examiner

Gims Philippe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jun 11, 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

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Response to Amendment

1. Applicant's response received on June 11, 2001 has been fully considered, but the arguments are not deemed to be persuasive.

Claim Rejections - 35 U.S.C. § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 5, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Ulich et al. (US Patent no. 5,457,639) for the same reasons as previously set forth in the last office action mailed on March 6, 2001, paper no. 12.

Response to Arguments

Regarding the above claims, the applicant argues that Ulich neither discloses nor suggests temporal and spatial discrimination of lines of pixels. The examiner respectfully disagrees since applicant's own disclosure states that "*the pulsed laser 102 emits pulses ... to match the data acquisition rate of typical CW lidar systems. This is possible due to the short pulses . The pulses may be scanned transversely with respect to the direction of relative motion to generate the scan*

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lines as shown.” A close look at Ulich col. 5, lines 6-15, and lines 25-41 will show the same lidar comprising the spatial discrimination coupled to the laser for steering the light beam.

The applicant further argues that he/she teaches a “*line scan*” technique for accumulating a matrix of pixels making up a complete visual image under water. While the examiner acknowledges that such limitation is claimed, Ulich discloses accumulating matrix using the same scanning technique (See Ulich figs 3A and 3B). Further while Ulich performs the scanning in the roll direction pixels are accumulated which will send the detected image to the visual display monitor (See Ulich col. 6, lines 23-32).

The applicant further argues that the claimed “temporal discrimination of the range gating element is neither taught nor suggested. The examiner respectfully disagrees since Ulich teaches a gateable microchannel plate which provide the same gating as claimed above (See Ulich col. 5, lines 28-36). While the applicant insists on the temporal discrimination of the range gating, a look at page 6 of the applicant only disclose that the line scan reduces the backscattered return signal by spatial discrimination. In col. 5, lines 37-41, Ulick discloses that the camera characteristics include the claimed gating and also the “ water backscatter” is also reduced. In addition, the applicant uses a 5 ns pulse while performing the temporal discrimination. In col. 5, lines 11, Ulick clearly disclose using pulses les than 20 ns. It is clear that 5 ns is less than 20 ns. Therefore, the limitation is clearly met by Ulick.

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In fact if Ulick insists on using pulses less than 20 ns, it is because Ulich acknowledges that each pulse defines a single pixel and the pulse width does matter in recognizing the object under water one the scan lines are combined.

Claim Rejections - 35 U.S.C. § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulich et al. (US patent no. 5,457,639) in view of Contarino et al. (US Patent no. 5,822,047) for the same reasons as previously set forth in the last office action mailed on march 6, 2001, paper no. 12.

Response to Arguments

Regarding claim 2, the applicant argues that the combination of Ulich et al. and Contarino et al. neither teaches nor suggests "temporal and spatial discrimination" and "range-gating". The examiner respectfully disagrees because while Ulich suggests pulse width of less than 20 nsec and an automatic gating component in col. 5, lines 10-11 and col. 6, lines 38-53 respectively,

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Contarino et al. does disclose the “temporal and spatial discrimination” feature in col. 4, lines 10-16. And in particular the range-gating is suggested in col. 4, line 13-14.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulich et al. (US patent no. 5,457,639) in view of Schneiter (US Patent no. 5,082,362) for the same reasons as previously set forth in the last office action mailed on march 6, 2001, paper no. 12.

Response to Arguments

As per claim 4, the applicant argues that neither Ulich nor Scheniter a lidar imaging device. And instead a video camera is disclosed. In response, the examiner would urge the applicant to indicate how a camera is not an imaging device. Further, the applicant indicates that his/her claim specifies that the pulse rate of the imaging lidar above 600 Khz. A close reading of Schneiter col. 16, lines 18-19, will show that lower rates can be used, however, the prior art strongly suggests to use fast pulse rates (600 Khz as claimed). While the examiner may agree that in the example used by Schneiter “up to 500 Khz” is used, however, the prior art never precluded pulse rates higher than 500 Khz.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulich et al. (US patent no. 5,457,639) in view of Geiger (US Patent no. 5,117,126).

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Response to Arguments

Regarding claim 6, the applicant argues that Geiger neither teaches nor suggests the claimed periodically poled crystal and that the examiner is using hindsight, using the applicant's disclosure as a road-map. The examiner disagrees since in col. 5, lines 45-56 the claimed limitations are present. In addition, the reasons of "achieving balance of effective gain of the crystals" is given by Geiger in col. 3, lines 56-60.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gims S. Philippe whose telephone number is (703) 305-1107. The examiner can normally be reached on Monday through Friday from 8 a.m. to 4 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley, can be reached on (703) 305-4856. The fax phone number for this Group is (703) -308-9052 (formal responses) and (703) -308-5399 (for draft responses).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703)-305-3900

Gims S. Philippe



August 9, 2001



CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
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